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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,885	12/16/2003	Takeshi Nishi	07977-121003	4773

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EXAMINER

NGO, HUYEN LE

ART UNIT PAPER NUMBER

2871

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/735,885	Applicant(s) NISHI ET AL.	
	Examiner Julie-Huyen L. Ngo	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 July 2006.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 13-16 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 13-16 is/are rejected.
- 7) Claim(s) 16 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Claim Objections

Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 16 recited "*a display*" that lacks antecedence and renders the claim improper dependency since it is depending from a method claim 15.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (US 5694188A) in view of Wakita et al (US 5574593) and Kobayashi et al (US 5305126).

With respect to claims 11-13 and 15, Sano et al. discloses (at least in figs. 1, 7 and 10; col. 1, lines 30-41; col. 3, line 1 to col. 5, line 20) a liquid crystal electro-optical device comprising:

- a pair of substrates 1/17, at least one of said pair of substrates being transparent;

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- a light modulating layer interposed between the pair of substrates, said light modulating layer including a guest-host type liquid crystal
- comb-shaped wall electrode 10 (11&12) for applying an electric field in a direction parallel with the pair of substrates (see figures 1, 7 &10)

Wherein

- the liquid crystal molecules and the dichroic dye molecules are aligned in the direction parallel with the substrate/screen by the electric field to obtain a light transmission state (col. 4, line 57- col. 5, line 19)

Although, Sano et al. do not clearly disclose that the guest-host type LC used in their display device including an optically active substance, and the features recited in claims 14 and 16.

It is well known in the art for a guest-host type LC to include an optical active substance such as chiral component in the LC material for compensating the performance of the dichroic dyes, which results in a good colored light scattering conditions under applied voltage condition as well as improve the threshold characteristics of the display as well as reducing the hysteresis response, which may become prominent when polarity of the applied voltage is changed as evidenced by Kobayashi et al US 5305126, Col. 56, lines 40-50.

Furthermore, a guest-host type is well known as a bright mode, which does not use a polarizer (see Sano col. 1, lines 30-41), and intensively been developed due to its brightness and high contrast (see Wakita et al col. 1, lines 43-53).

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Wakita et al teach (abstract) mixing a trace of chiral dopant as an optically active substance to nematic liquid crystals and certain percent of dichroic dye to form guest host LC type for use in their LC display device to obtain brightness and high contrast.

Therefore, it would have been obvious for one of ordinary skill in the art to realize that Sano et al's guest-host type LC including liquid crystals, an optically active substance (chiral), and a dichroic dye for obtaining brightness and high contrast, as taught by Wakita et al and/or as evidenced by Kobayashi et al. and Wakita et al.

Claims 14 and 16:

Since the optical substance (chiral) is added to the nematic liquid crystal to form a cholesteric phase with helical arrangement of directors where the dichroic dye molecules lean on, the dichroic dye molecules are inherently oriented in different directions around the axis that is perpendicular to the substrates to attain a dark state when the electric field is not applied.

Response to Arguments

Applicant's arguments filed July 24, 2006 with respect to the references of Sano and Wakita have been fully considered but they are not persuasive.

Applicant's only arguments:

There is no motivation to combine Sano and Wakita in the manner set forth in the rejection, and because the rejection has failed to set forth such a motivation and, accordingly, the rejection has failed to allege a prima facie case of obviousness.

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Moreover, Applicant argues that nothing in Wakita, which relies on a structure that is substantially different from that of Sano, would have motivated one of ordinary skill in the art to modify Sano's device in the manner set forth in the rejection.

Examiner's response:

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as set forth above in the rejection, there are motivations found in both Kobayashi and Wakita references for forming a guest-host type LC, which includes an optical active substance such as chiral component in the LC material for compensating the performance of the dichroic dyes. Doing so would result in a good colored light scattering conditions under applied voltage condition as well as improve the threshold characteristics of the display as well as reducing the hysteresis response that may become prominent when polarity of the applied voltage is changed as evidenced by Kobayashi et al (US 5305126, Col. 56, lines 40-50). Wakita et al also teach (abstract) mixing a trace of chiral dopant as an optically active substance to nematic liquid crystals

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and certain percent of dichroic dye to form guest host LC to use in their LC display device for obtaining brightness and high contrast.

Furthermore, a guest-host type LC is well known to one of ordinary skill in the art as a bright mode since it does not require using of a polarizer (see Sano col. 1, lines 30-41), and intensively developed due to its brightness and high contrast (see Wakita et al col. 1, lines 43-53). Therefore, both Kobayashi and Wakita are qualified as having the motivation and/or general knowledge available to one of ordinary skill in the art to combine with Sano in the set forth above rejection.

The Examiner does not relied on the structure of Wakita et al as a motivation to modify Sano; however, the only structure mentioned by the Examiner, i.e., the polarizer that is a well-known feature, which do not require when a guest-host type LC is use.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on M-Thursday.

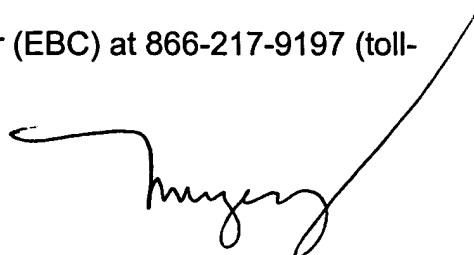
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. David Nelms can be reached at (571) 272-1787.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 25, 2006



***Julie - Huyen L. Ngo
Primary Examiner
Art Unit 2871***